DETERMINANTS OF HOTELS' PRICES: A CASE STUDY OF SELECTED HOTELS IN ISLAMABAD AND RAWALPINDI.

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Abstract

This study estimates the impact of various influencing factors on the room rates of hotels in Islamabad and Rawalpindi. I applied hedonic pricing model and used panel data obtained from 20 hotels for the time period 2010 to 2015, through questionnaire. I used random effect model. The results show that the star rating, availability of shuttle bus service within and outside the city, star, gym, security guards, hotel location, online reservation, presence of garden, hot tub and cafe have significant impact on hotel room rates. Online reservations, hotel located within city center and distance from airport have negative relationship with hotel room rates. Assessment of the relative importance of hotel attributes will escape investors and hotel managers from extravagant on insignificant attributes this will enhance their revenues. The hotel owner should give priority to the security related attributes for customer's satisfaction.

Keywords: Hotel Charges, Environmental attributes, hedonic model, Tourists, socioeconomic factors

CHAPTER I

INTRODUCTION

1.1 Background and statement of the problem

The arrival of foreign tourists in Pakistan is increasing day by day. Pakistan achieved a record growth in tourist arrivals of number of tourists in the year 2005, 798260 to be specific, from all tourist generating markets, which is 23.3 percent increase from the year 2004. Pakistan's share in the region of tourism has increased from 8.6 percent in the year 2004 to 10.1 percent in the year 2005. In addition about 42 million domestic visitors traveled within the country in the year 2005 (Samina & Mehmood, 2006).

Islamabad is the capital city of Pakistan where there are a number of hotels for national and international customers. Customers consider various characteristics while booking a hotel. Some hotels have more facilities as compared to others. Definitely, the absence or deficiency of required characteristics, for example hotel services, star rating and proper location of hotel are expected to have vast effect on room rates. On the other hand People book hotels not only to spend times but also for enjoyment, pleasant atmosphere and change. At the time of booking they keep in consideration several characteristics of hotels and desires a mixture of these characteristics in their decisions of booking. This brings the question of why hotel room rates (some times in the same location) vary from each other and another question is why despite the price difference, some lodgers would choose to lodge in a hotel with higher room rates.

The customers are then charged differently even in same region. In the year 2015, the price of one night stay of double bed room in Marriott hotel Islamabad is 22884 PKR whereas Serena hotel also located in Islamabad but charging 23200 PKR of one night stay. Envoy continental in Islamabad charging per night stay for double bed room 9500 PKR. Similarly Islamabad hotel is charging 19720 PKR for double bed room of one night stay.

Hotel price is not a price of only room but it also includes the services and facilities which customers enjoy during their stay. This is a difficulty with the hotel price because hotel prices are package prices and it does not present the facilities or characteristic's prices differentially. Pricing is an issue of utmost importance for practitioners in the hospitality industry. It is the only element in the lodging marketing that impact directly on revenues (Kotler, Leong, & Tan, 1999). Hedonic price model have been used to deal with the package price it enables us to break the package price into prices of each characteristics included in the package. In earlier studies the hedonic price model used for getting the implicit prices of different items in case of automobiles, Bordeaux wine, computers, in the hospitality industry and tourism (D. E. Andersson, 2010; Chen & Rothschild, 2010; Thrane, 2005, 2007). This model has also been used to estimate the detriments of hotels prices in Southeast Asian city-state Singapore (D. E. Andersson, 2010), the Norwegian capital Oslo (Thrane, 2007) the Southeast Asian city-state Singapore (D. E. Andersson, 2010), and the Taiwanese capital Taipei (Chen & Rothschild, 2010). To achieve the objective of finding the implicit prices for the individual attributes, hotel room pricing can be studied from both demand-side and supply-side perspective.

Several hotel attributes took into consideration by different authors that can affect room rates, such as the location of hotel (Thrane, 2007), facilities and amenities (Alejandro

García-Pozo, Sánchez-Ollero, & Marchante-Mera, 2013; A García-Pozo, Sánchez-Ollero, & Marchante-Lara, 2010), service quality (Grobelna & Marciszewska, 2013), star rating and atmosphere of the hotel (Juaneda, Raya, & Sastre, 2011). Because every country have its own geographical and demographical circumstances therefore the findings of each study varies from others. Moreover within city every hotel charge different prices because service quality, location and purpose of the visits also affect the room prices. Apart from the conventional variables mentioned in literature this study also estimate the effect of socioeconomic and environmental variables on room prices in Islamabad and Rawalpindi. This study also applies the hedonic price model in supply side perspective and assesses how hotels charge different rates with providing certain facilities. Hotel industry in Pakistan is facing numerous challenges. By addressing these and other problems and solving them, our assets can be capitalized for the advancement of tourism and economic development in the country.

1.2 Research question:

How hotel characteristics, security and environmental attributes effects the room rates in Islamabad and Rawalpindi?

1.3 Objective of the Study

To investigate the impact of a variety of hotel characteristics, security and environmental variables on the hotel charges in Islamabad and Rawalpindi.

1.4 Hypotheses of the study

- Hotel attributes affect the room rates of hotels in Islamabad and Rawalpindi.
- Increase in the security measures of hotels leads to increase room rates of hotels.

1.5 Organization of the study

The study is organized into five chapters. In chapter 1 introduction about the study, research question, hypothesis and objective of the study are given. In chapter 2, relevant literature are presented. Data used and methodology developed for the study is given in chapter 3. Chapter 4, comprises on results of the study and discussions. Chapter 5, is based on conclusion and recommendations based on the finding of the study followed by suggestions for the further research.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction:

Many studies emphasized on the determinants of prices of hotel rooms in different contexts and in different locations. Numerous determinants have been established to have important (significant) impact on room rates in several studies. The hedonic price model, has been widely used to estimate such relationships. These issues are discussed in detail in subsequent section.

2.2 Hedonic price model in Hospitality and hotel industry

By taking data of 74 hotels Thrane (2007) assessed separate regression models for double & single rooms. So price of the single or double bed rooms are dependent variables of his study whereas nine characteristics of hotels were selected as the independent variables. The results of his estimated models showed that hairdryer and mini-bars are most significant variable of the study. Locations of hotel and free parking also have visible effect on the prices of rooms. Hotel chain found different effects for both rooms i.e. insignificant for double bedroom and significant for single bedroom. There is significant but negative impact of room service, which persuades Thrane (2007) for more additional research before doing any conclusion. The last three features: restaurant, swimming pool, and hotel size have insignificant or very minor influence on room prices in Oslo. Thrane (2007) did a very exciting observation by examined his data for understanding that whether customers have the chance of saving money by electing the hotels that not offer hairdryers and mini

bars. He concluded that mostly hotels offer these amenities so the consumers are actually limited in their choices for selecting hotels. Though the concentration should not be just on money saves by opting hotel. Because it's May possible a guest stays in this given hotel and does breakfast in any local café or restaurant near the hotel.so defiantly in this way consumer will save money particularly in the case when hotel have excessive charges for breakfast. Conversely as Lancaster illustrated, "Goods in grouping may be hold features different from the pertaining of goods individually" (1966:134). Therefore, the utility gained by a grouping of two goods in unique hotel (visual, nutritive, and feasibly knowledgeable features) is not similar from the utility obtained from separately consumed a bed and breakfast. The same is for parking and minibars.

D. E. Andersson (2010) studied the attributes i.e. hotel facilities, location, official star rating and transaction rates of hotels and consumer feedbacks (opinions on room rates) in Singapore. He collected data between January 2006 and March 2007 his sample contained 559 customers of 69 hotels. They provided feedback on (to hoteltravel.com).real dealing rate for one night stay in double bed room is dependent variable in his study. Independent variables of the study are consumer perceptions and objective attributes. The results of his regression identify various club goods, general neighborhoods, star rating significantly affect the room rents .Whereas consumer's feedback shows inconsistency in certain star rating. D. E. Andersson (2010) worked on panel data, which not only includes cross-sections but it also extended to a year (time series). He doesn't deliver plentiful information about the nature and management of the data. How he handled the effect of outer influences i.e. inflation, consumer feedback and seasonality. Furthermore, he took

data from internet (hoteltravel.com) without giving any material about reliability and validity of the data.

Chen and Rothschild (2010) inspected the influence of disparate characteristics on the prices charged in Taipei for hotel rooms. They assessed three models on the data of 73 hotels for weekday and weekend sample. They used two dependent variables, the prices of per night stay in both samples. The outcomes show that three variables i.e. conference facilities, internet access and TV affects both weekday and weekend prices. While room size significantly affect the weekend prices only. The existence of gym center has robust effect on weekday prices only. The supreme fascinating and scarce discovery of Rothschild is the robust negative relationship of room rate and location. Chen and Rothschild gave two probable interpretations for that: the hotels outside the city with routes possess the high room rates, while the extra competitive market environment within the city possesses lower room rates. One more possible factor is that congestion of traffic on roads, air and noise pollution and criminality which commonly present in almost all capital cities, keeps the room rates lower than the rates of hotel situated outside the city.

One worrying thing about the study of Chen and Rothschild (2010) is that they divide customers of hotels for two purposes i.e. weekend customers for leisure purposes and weekday customers for business purposes. While it is very problematic thing to give such type of justification without providing any reason. Maybe business travelers stay over the weekend for other reasons also same as for the leisure travelers do same in week day. Weekday or weekend can't specify the purpose of staying at hotel.

The specialty of the 'hedonic pricing' model (HPM) is that hedonic price model looks at the goods and services as a pool of 'characteristics' or 'attributes'. So this modeling method can be useful to any market in order to differentiate products and services Monty and Skidmore (2003). This part briefly describes the progression of the hedonic price studies in historical point of view and presents a lot of studies in which authors have used the hedonic model in the hospitality industry as well as in the hotel industry also. So review consists on hospitality industry with the HPM application, and specially focused on hotel market. This review will deliver the foundation for the selection of the variables and model for current study.

Earlier studies have exposed the use of this technique to many things like automobiles, housing, Bordeaux wine, computers, hospitality industry and several aspects of tourism Thrane (2005); (Thrane, 2007); (Chen & Rothschild, 2010); (D. E. Andersson, 2010) hedonic model is actually very common for the estimation of economic value of different goods and services in hospitality industry and in tourism for example package tour prices, airfare prices, hotel room prices, restaurant prices (Thrane (2005).

Several studies by using hedonic technique, analyzed inclusive or package prices of holiday hotels of northern European in term of sun-and-beach fragment. Espinet, Saez, Coenders, and Fluvià (2003) examined the consequences on price of several characteristics of the holiday hotels. Author took three Spanish resorts of coastal areas and his study found vast price differences among four star hotels and the others. He also found some variables which have significant effect on the prices i.e. hotel size, accessibility of parking, location, distance to the beach. Moreover author used hedonic technique to see the significant

variables and found these variables have significant impact not only on prices but also on seasonality.

Thrane (2005) did a survey in March 2005 for the hotels of Norway. He also used hedonic price model for determining the value of different attributes because hotel room rate is the package price of different facilities provided by the hotels. This was an internet based research data was collected of 88 hotels from the site (www.hotell.no).And results shows that mini bar, free parking, distance to city center and hairdryer are important determinants and have significant impact on prices of the rooms. Apparently unrelated regression models integrating nine attributes of hotel clarify about 70% of deviations in room rates. And these nine variables are affiliation of hotel to a chain, existing of a mini bar in the hotel, swimming pool, free parking or availability of parking, restaurant, hair dryer, 24 hours room service, distance to airport and BEDS. He also explained that star rating is determined by different types of features although it usually considers a factor of determining the price.

Fleischer (2012) did research on main meditation regions in two different seasons, low season and high season. She collected data of 2819 rooms in high season and 2406 rooms in low season from the booking.com, which is the site for booking hotels worldwide. She also used hedonic price technique to see the effect of sea view on room prices and did estimation through fixed effect model. Unlike the previous studies she used to estimate only one attribute effect on the prices. Results of her study show that hotels with sea view charged about 10% extra price of rooms than the hotels not having any sea view. And there were no significant variations in prices along with the region and season so it could be said that Mediterranean Sea view has equally importance in every region and in every season

as well. Hamilton (2007) similarly tried to inspect the role of coastal and other land features, district Schleswig Holstein in Germany, in his study instead of the impact of climate change solely. The investigation shows that average price of accommodation decreases if the length of dikes increases in a given district. Price of accommodation increases if length of open coast increases. Aguiló, Alegre, and Riera (2001) worked on tourist packages by using hedonic model and performed assessments of statistical impact on the price configuration of tourist packages which are offered to tourists on the Mallorca Island. The result of their study shows that type of board, location and star rating have great role on the distinction of prices. They concluded that there are variances in services contracted, and in their worth, but also in some other aspects, i.e. the surroundings or the location and the scenic view of the stay.

A frequent application of the hedonic pricing model in the hospitality industry is the analysis of the hotel market. Israeli (2002) investigates how and to what extent the star rating and hotel affiliation to a chain influence prices in hotels of Israel located in different geographical locations. This study also investigates the relationship of firm's assets with business decisions. And author comes up with the result that there is a consistent and positive impact of star ratings on hotel prices similarly inconsistent impact of corporate affiliation on the prices.

White and Mulligan (2002) examine hotel room's rate of motel and hotels in four U.S southwestern states during period 1998.They used three hedonic models one for winter season, second for the summer and third for all observations. Author estimates the prices of about 600 launches which were belong to six national chains. Author used OLS regression and situation attributes (regional location, temperature, specialty of local staff)

along with sites attributes (spas, pools, and free breakfasts) estimated. Results shows that chain affiliation causes much variation in the prices in both seasons moreover other site and situation attributes also found significant in this study. The most important finding is that estimates remain stable in both very different seasons.

Monty and Skidmore (2003) did a study to highlights the importance of hedonic price technique in the tourism. They collected data from US for willingness to pay for particular features of bed and compliment breakfast in Southeast Wisconsin. Their research found quality characteristics of rooms like availability of hot tub, private bath and rom size are more significant or effective to determine the prices and room services, fireplaces, scenic views and themes are found less or insignificant. They also found the time of the year, location and day of the week very important determinant. This is demand side study and data collected from customers by personal interviews and phone calls so there are some contradictions in the data methodology and focus of this research yet this study found useful for hotel managers in term off analyzing the cost benefit analysis of the presence or exclusion of an attribute from the hotels

Roubi and Littleljohn (2004) tried to develop a hedonic model for valuation of hotel assets in the UK. For the estimation of value drivers of property and to predict property value author used the data of UK property transaction between time periods 1996 to 2002.the results of the study compared by the authors with the US study and found similar. It was established after investing the both studies that local economic conditions and physical facilities are significant in property value and also with the sale prices had significant and positive effect. The, recreational facilities, size of the property, year of sale and economic conditions illuminated 73 % of hotel values on the other hand meeting

facilities, chain affiliation, banqueting facilities, food and drinks facilities and location of hotel explained only 27% of total value.

Ferreira and Salazar () used multi attribute approach and described that the selection of hotels depend on the direct and indirect (word of mouth, and satisfaction, value of money) attributes. For the successfulness in the hotel market, not enough to only fascinate new customers or guests, it is essential that administrators of hotels must focus on retaining current customers also by employing active strategies of customer loyalty and satisfaction. In hotel market satisfaction of customers is mainly hooked upon the excellence of quality of services and products.

In this time period of Internet, millions of customer attaches with the online shopping worldwide. Therefore there is severe pressure for e-commerce corporations which wants are trying to reserve and take full advantage of their revenues from Business-to-business (B2B) and Business-to-consumer (B2C) activities. Slavat.et.al designate a hedonic pricing model for assessing hotel prices. Garcia et.al did research on Spain July (2010) central objective of their work is to offer evidence on pricing established on the features (attributes) of camping. For this purpose they also applied hedonic model and used data from diverse sources. The coastal location, having a quality difference, ecological establishment and attributes quality show the greater influence on prices of camping. The effect of some other variable emphasizes the policy initiated by public administrations as well as by the private sector of capitalizing in sustainable tourism.

Tenigbade (2011) in their article researcher tried to isolate the hotel attributes which are effective on room prices and which are not effective. This is demand side study and

data is collected from guest houses and hotels in IKEJA which is local government zone of Lagos state. The information about the existing hotels were collected from the tourism development corporation of the Nigeria(NTDC).Author used hedonic price technique and almost 200 questionnaire were developed and 154 were given back with response.4 components of attributes were analyzed and results showed that seven factors namely, facility of shuttle bus services, hotel/ guest house is affiliated to a chain of hotels, facility of swimming pool, facility of gym, facility of business center within hotel, availability of club and conference rooms had insignificant effect on prices of hotels .Whereas constant electricity supply, water supply, fine room services and closeness to city center have much importance and significant for hoteling. Joseph's aim of the research was to deliver information for tourist purposes through an enquiry or the estimation of the seasonality and the location Hidden in the price of lodging. The study data was taken from Mediterranean coast of European municipalities. By quintile regression the author discovers that the effect of seasonality, though very significant, is generally constant along with the price spreading; only the greater effect of seasonality was seen in the Argelès-sur-Mer. With respect to the assessment of location, the element of the hotel or flat in a French location is appreciated or valued more extremely at greater percentiles.

Bohdanowicz (2006) investigates the impact of the, economic, geo-political and Socio-cultural situation of country on the environmental and green initiatives incorporated in studied sector. To demonstrate the dissimilarities, hotels in Poland and Sweden were taken and overall 349 managers contributed in an e-mail-based investigation. The study exposes that mostly hotel manager identify the requirement for environmental security and are involved in many activities for that. The pro-environmental and economic condition

efforts introduced by the government also found effective on certain characteristics of hoteliers' action. This survey has specified the two foremost important guidelines to be followed, when directing hotel industry to environmental sustainability.one comprises integrating responsible, behavioral and technical practices in this sector. The second is the requirement of introducing countless demand for ''green'' actions from the clients.

Aguiló et al. (2001) examines the various attributes of hotels and their effect on prices in the sun-and-beach segment. They also used the hedonic function and explored the Monthly charges of the majority of hotels in the inland Mediterranean coast of Spanish. They gathered data from catalogues of tour operator in the month of May to October (1999). Hedonic function quantified as random-effect model and characteristics of the both region and hotel, where hotels are found are used. Besides hotel classification, area, beach distance, accessibility of parking and room facilities (features) has strong influence on seasonality and on peak price also. Their findings also show that Seasonality effect is greater on three star hotels and lowest on hotels which situated in the southern regions.

Alejandro García-Pozo et al. (2013) tried to evaluate the effect of environmental management practices on rooms pricing in the hotels of Southern Spain (Andalusia). On this database authors applied a hedonic pricing model. The consequences of the regression estimations indicate that room prices rise when the hotel amenities are improved by applying environmental sustainability methods. Customers definitely value the application of environmentally sustainable procedures, by growing its utility; they are ready to pay a more price for the service given.

Grobelna and Marciszewska (2013) present the study analyzes managers' & consumers' perception of the Northern Poland about the service feature in hotels. Authors find out the presence of gaps or lack between the perceived and expected hotel service quality. They identified the key reason of discrepancy and the authors undertake an attempt to demonstrate the most crucial tasks facing managers to improve the quality of facilities they offer. They used improved form of the SERVQUAL Mechanism was employed to measure the value of hotel services. They took data from a sample of managers and guests of 25 hotels of different classes (from one- to five-star hotels). Perceptual map and some statistical methods were applied in the practice of analysis.

GuShin, PiYing, and HsinWei (2011) et.al did a study on international hotels in Taiwan they used hedonic model in order to investigate the gap between the prices that individuals willing to pay and the prices they actually pay for hotels. They took data of 58 hotels from their websites. The list of hotels was taken from Taiwan tourism bureau and significant determinants were found the ratio of employees, view of tourist sites, distance from hotel to train station and number of guest rooms. Consumers are willing to pay more if the international hotel have more employee ratio, scenic view and large number of guest rooms. Similarly they ready to pay more if the distance towards the train station is shorter.

White and Mulligan (2002) analysis the variance in the room prices at two changed geographical scales. Data of 98 hotels of Tucson were analyzed in local scale. And at regional scale 600 hotels in Arizona, New Mexico and Colorado were analyzed. Study says that the non-spatial and spatial both attributes have influence on the prices of rooms. Same like others authors author also used hedonic price technique for the hidden prices of site

and situation characteristics.in general both findings determine that heterogeneity of the hotel room prices are finest clarified by the mixture of spatial and non-spatial qualities.

Lewis and McCann (2004) focused on hotel industry of UK and explores the service quality of hotels. For this purpose data were collected from four star hotels of the sample, through questionnaire from the guests of the hotels. And outcomes show that that guest gave favor to the clean and comfortable bedrooms, good quality food, friendly, well-mannered and efficient staff, high level of room security, and well-organized check in and out.

Ezeh and Ezeoke (2013) tried to cover the hotels of Akwa town of Nigeria and central goal of their exploration was to highlight the adoption pattern of guests in relative to new hotel inventions. They got data through surveys, interviews and group discussions with customers and discovered that the managers of all hotels must realize that significant matters in the adoption of new product or service of the hotel i.e. high level of self-confidence from staff, Staff`s worthy information of services/product, Impact of age of hotel customers, Boss influence, Gift influence, Occupational influence, system Opening marketing, Product pricings, Time effect and Continuing marketing communication.

GuShin et al. (2011) also involved in this type of study but they investigate on supply side. They took data of 58 hotels of Taiwan from the Taiwan tourist bureau. They objected to explore that how much a consumer willing to pay for each facility by using hedonic price model (HPM) they also examined the difference between the charges that consumers are willing to pay and charges which they are actually pay for rooms of these

hotels. The outcomes indicate that, leisure accommodations, the strength of guest rooms, the ratio of workers, the distance to transport places and special tourist sites are significant.

Additionally, about literature which is intensely associated to our study is the price determinants of the hotel's literature. Many observed studies emphasis on recognizing the determinants of prices of hotel rooms in different contexts and in different locations. Numerous determinants have been established which have important (significant) impact on room rates in several experiential studies. Israeli Israeli (2002) (2002) investigate that upper star category, central location and greater number of rooms have a significant (major) influence on prices of room. A linear regression study of Bull Celermajer, Sorensen, Bull, Robinson, and Deanfield (1994), concluding that greater distance from the central of city negatively affects room prices and conversely, higher star indicates to higher charges. Hung, Shang, and Wang (2010) also investigated the elements of hotel room pricing by taking data of 58 hotels in Taiwan, he took the variables in his study like room number, management style (managed as chain affiliate or self-reliantly owned), hotel age, ratio of independent tourists, type of hotel (city or resort), members per room and distance. Outcomes of the study determine that, hotel age, room number hotel type and per room persons are significant factors of the hotel average room rates. In addition, study of Mont Monty and Skidmore (2003) concentrated on precise features such as hot tubs, restaurant, room service and to realize which amenities have extra important influence on prices. Likewise,Thrane (2007) inspected the associations between a numeral of hotel characteristics (e.g. restaurant, pool, hair dryer, room's service) and room charges.

According to study Zhang, Ye, and Law (2011), most of the previous studies on the price elements of hospitality industry have implemented the Hedonic Pricing Models ,

HPM accepts that the price of any item is a bundle of item's linear function. Mostly, the basic evidence of the previous studies built on HPM says that room price is related to the existence or nonexistence of several hotel articles (presence of a several item will effect hotel quality, and then the quality will effect a consumer's readiness to pay). Zhang et al. (2011) inspected the hotel guests' assessments on online travel websites (tripadvisor.com) on the hotels in New York, and determined that quality of hotel characteristics is verified over the customer assessments on a travel website. The theory of the order of needs is maintained in the hotel industry and the findings show that there are the three most important (quality of a room, service, location) out of 7 determinants of room price for the hospitality industry. The investigators also distinguished the three segments of hotel industry that is Luxury Hotels which includes 4-5 star hotels; Midscale Hotels comprises with the 3-3.5 star; Economy hotels are 1-2.5 star and they found that the qualities and characteristics that can affect hotel room prices vary significantly among the dissimilar hotel segments.

In another study similarly did by O'Neill and Carlbäck (2011) on the performance of branded and self-governing hotels during diverse economic cycles, the Author determined that brand also matters a lot. This is as brands may decrease the instability of a business and present less risky investment. Moreover, the researchers inaugurate that brand also give value to business, because brand name create intangible benefit to the hotel. Review of the related literatures on the theme matter – the determinants or factors of hotel room price - exposed the important factors such service, brand affiliation, location and quality of room that continuously, found to be basic drivers of hotel room rate:

Alias and Tan (2014) also identifies the main determinants of hoteling in klang valley in his study. For this purpose they get information and feedback from hotel operators, hotel guest and from stakeholders. Researchers adopted mixed method of qualitative and quantitative approaches for the achievement of their objective. They found that service quality, scale and location more significant as compare to other variables.

Yusoff, Abdullah, and Alam (2009) of research is to hotel selection Characteristics in Kuala Lumpur they identified four significant hotel feature variables that were location, cleanliness, services, and facilities. Experimental test was piloted earlier; questionnaires were circulated to the tourists of Middle East staying within Kuala Lumpur at the five (5) star hotels. Gained data was investigated using (SPSS) and descriptive study was used to define the utmost significant attributes in the choice of hotels of Middle East tourists' in Kuala Lumpur.

Dominici and Guzzo (2010) the realization of any hotel business is openly connected to the satisfaction of customers attain from hotel amenities. The customer appreciation is a business viewpoint that pursues to create worth for customers, accomplishes their expectations, determine the capability to meet needs of customers. The information of the desires and needs of the guest is one of the peak significant features for quality agreement in the hotel Nonic, Begus, Milijic, and Radosavljevic (2007).

Tat Y.Choi and Remand Chu (2006) did an Asian and western travelers comparison of their perceptions about Hong Kong hotels. This study identified the 7 factors out of 33 which are more significant as compared to other in order to provide satisfaction to the customers. They used the Varimix technique for analyzing data. Important seven factors

are: staff service quality, value service, room quality, business services, general amenities and IDD facilities. Whereas western travellers influenced by the factors of room quality and Asian traveler's satisfaction overall derived from the value factors.

2.3 Hedonic price model

Snyder, Kilgore, Hudson, and Donnay (2007) tried to investigate the market of undeveloped forestland. They took data of 387 parcels or forestland that was bought in 2001 or 2002.they used hedonic model for examining the significant factors of this market and they found that among parcel physical characteristics, , merchantable timber volume, amenity features, , development trends, , distance, and adjacency conditions and , terms of financing, only four factors i.e. road access and density, method of financing, presence of lake, , proximity to population centers have positive and significant influence on per hector prices of forest land whereas there is negative connection between size of the parcel and price of per hectare, though the influence of parcel size in model was small. Using a distinctive data of 1520 ski lifts and 84 ski resorts and cable cars in Austria, Falk (2008) investigate the link between prices of lift ticket for the 2005–2006 period and the ski resorts' features. The results, were obtained by using OLS and robust techniques, display that the high speed chairlifts length of the ski runs, high-speed chairlifts transport capacity and gondolas, snow conditions and access to nearby ski areas enclosed by the same lift pass these all have significant and positive effects on the price of a 6-day ski pass and a 1-day lift ticket. Author also used hedonic model, given the empirical estimates, they also deliver, according to the quality the ranking of the ski resorts Hedonic approach also used by Hartman (1989) a point of departure, his paper generate a model for handling pricing strategy and product design. The model addresses differentiated product market for a

multi-product firm. It recognizes criteria for ideal design and pricing for the several products of the firm, given the cost of production of firm, the designs and prices of Rival products and given tastes of consumers. The model is showed with application of real world to the luxury hotel industry. Murray and Sarantis (1999) did a study to the car market of UK and they applied superior goods model in its extended version. They tried to estimate, both distinct equations for rent price of used cars and for demand of new car. They used hedonic price equations and allowed for the straight influence of superiority on car Demand. The outcomes show that user cost and quality for both used and new cars effect significantly the demand of cars, with the user cost for new cars have negative effect and used cars displaying positive effects, as forecast by superior goods model. Another important outcome is that motor car service costs have strong negative effect which perhaps reflects the rising insurance premium and other vehicle servicing

Roubi and Litteljohn (2004) the value of characteristics of houses.by using hedonic analysis they come up to the result that sprinkle system, shower stall, gated community, garden bath and double oven have a significant and positive affect on house's selling prices. On the other hand no attic space, nearness to landfill, earthquake zone, nearness to insecure flood zone and nearness to high voltage line have negative affect on the selling prices of houses.

Selim Selim (2011) applied the hedonic model in order to determine the important characteristics of the houses that affect the rents of the houses. He did study in turkey and analyzed the data of 2004 house hold budget survey. The most significant variables which found in the estimation results are building type, type of house, number of rooms in the

house, size of house, and some other characteristics also found important determinant of rents like water system, natural gas, pool.

Hite, Chern, Hitzhusen, and Randall (2001) also did study to quantify the value of property buy using hedonic technique. Authors assessed the specific impact of change in environment quality on the value of property. Particularly, the authors' emphasis was on the influence on prices of the existence of landfills near residential estate. Author's analysis proposes that closing landfills will not essentially mitigate property-value impacts.

The rareness of hedonic studies on water quality is surprising, particularly in the time of highly use of hedonic techniques to assess the value of air pollution on property value. Leggett and Bockstael (2000) used hedonic techniques to demonstrate that there is very important impact of water quality on the value of property. Author Discuss the effects of this omission, and deliver an application that covers this potential issues. This paper took benefit of a distinctive topographical environment, a dynamic housing market with large disparities in water quality, and results shows that progresses in quality of water can have significant and positive consequences on property values.

Babalola, Umar, and Sulaiman (2013) et al., Also used hedonic to capture the impact of multi-dimensional features of the houses on rents. Results of model estimation found that life span of houses, age, number of houses built in the locality and the rete of tenement charge by government are the most important determinant of the houses in Nigeria.

2.4 Efficiency of star rated hotels

Hotel star rating aims to match worldwide standards for the differentiation and the improvement of the hotel services and facilities. But still there is no generally or universally adopted and accepted rating system.one international institution is the agency of world hotel rating which have its headquarter in Belgium mostly used to categorized hotels. Having a more stars recommends more luxury and improved services, food and drinks, facilities for entertainment, many different sizes of rooms and similarly panoramic views. Supplementary requirements, such as health resort centers and gym facilities, leisure centers as well as site views and location, also generally considered in the description of a standard. However, a greater profitability and greater efficiency do not essentially linked with the greater number of stars. Using room divisions and price as a model.

Ismail et al. (2002) categorized all hotel in one price sectors of the market: luxury, economic and budget, and observed the collection of every multi-brand hotel corporation. These studies proposed that higher figure of stars leads to the higher and fine levels of quality. Similarly the subject of star rating presentation, Pine and Phillips (2005) recommend that better performance linked with the high stars. They recommended, this may be linked to the true statement that the assets related to the foreign partners, bring improved and more qualified management procedures, modern machineries, tools and as well as (foreign) customers to spend more. Positive connection between efficiency of hotels and the number of stars also propose by the study of Assaf and Agbola (2011). This is also observed by the Khataei, FARZIN, and MOUSAVI (2008) that five star hotels as compared to four stars hotels are more efficient and luxurious. Conversely, Chen and Rothschild (2010) studied that although there are bigger efficiency variances in 4-star hotels yet as a

group, they do well as compared to 5-star hotels. In a study did on luxury hotels in Iran, Tehran, detect that 4-star hotels are less efficient than the 5-star hotels.

TARIM, DENER, and TARIM (2000) that 4-star hotels are more technical and more efficient than any 5-star hotels and propose that the key difference among 4-and 5-star is the point, 5-star hotels delivered less adequate services to their clients (who are generally more expecting with higher payments).

Oliveira, Pedro, and Marques (2013) also estimate the star influence on hotel room prices of Algrave (Algrave is supreme important tourist place of Portugal).they also made an assessment between the hotels having golf courses and those that do not. And their result proposes the star rating an insignificant element and golf courses may ensure some significance. Major finding was that hotels not having golf courses found more efficient as compared to others that having it.

2.5 Summary of literature review

Several hotel attributes took into consideration by different authors that effect room rates, such as the location of hotel, facilities and amenities, service quality, star rating, atmosphere of the hotel. Because every country have its own geographical and demographical circumstances therefore the findings of each study varies from others. Even within country different cities may have different findings of relevant importance of the hotel attributes because every city also have own geographical and demographical circumstances. Moreover within city every hotel charge different prices because service quality, location and purpose of the visits also affect the room prices. To achieve the objective of finding the implicit prices for the individual attributes, hotel room pricing can

be studied from both demand-side and supply-side perspectives. In the former type studies, such as Monty and Skidmore (2003), obtained data from consumers through questionnaire to estimate their willingness to pay for each attribute.

2.6 Contribution of the present study

Environmental sustainability is the most urgent issue effecting the whole planet. Furthermore Islamabad is facing problems of insecurity which ultimately deteriorate the tourism industry. Apart from the conventional variables mentioned in literature such as room size, bath, TV, free parking, distance, conference room etc. This study also estimate the effect of security and environmental variables on room prices in Islamabad? According to my knowledge as such type of study has not been conducted yet in Pakistan, so this study will bridge the gap.

CHAPTER III

DATA AND METHODOLOGY

3.1 Introduction

This chapter provides details about theoretical framework, the nature and source of the data, construction and justification of the variables and estimation techniques. These are given in subsequent sections.

3.2 Theoretical Background

Usually hedonic models assumed as somewhat that closely link with pleasure or dedicated to pleasure. Therefore, the hedonic method was frequently used to estimate the price of different characteristics of numerous goods/services. Rosen (1974) described that a class of discriminated products is fully defined by a vector of objectively measured features. Observed product prices and the precise volumes of features linked with each good express as a set of "hedonic" prices or implicit prices. For the valuation of any product many internal and external factors are involved which change the value of that product. Hence a set of hoteling attributes are taken into account. Attributes of any product can be sale with the product, cannot be sold solely. Because a combination of the various attribute will be purchased. The hedonic approach hence signifies an effort to evaluate the value of characteristics of any product on the source of market values (Rosato, Rotaris, Breil, & Zanatta, 2008). Therefore, in the hedonic pricing, the compositions of any item (product) or service which is known as characteristics or as attributes look to be very important.

Most of the studies considered Rosen's 1974 classic article as the basis of hedonic studies but Court (1939) was the first economist who constructed the hedonic index for automobiles. It was Court (1939) who actually invented the hedonic term, in recognition of the "Probable contribution of any product, a motor car in this case, to the pleasure and welfare of its purchasers and public (Goodman, 1998). Identifying the Requirement of a well- stated model, Court (1939) introduced the model "hedonic" to designate the weighting of the comparative importance of numerous characteristics of a motor car, for example, braking capacity, horsepower, window area, tire size and seat width in the creation of an index of "utility and acceptance". On the basis of his data, he determined also that a semi log form would be used "since initial studies showed that this presented more closely linear and greater sample correlations" (Court, 1939; Goodman, 1998). Unlike Court's study, Rosen (1974) study received significant attention in the literature of hedonic pricing (D. E. Andersson, 2010; Chen & Rothschild, 2010; Espinet et al., 2003; Monty & Skidmore, 2003; Thrane, 2005, 2007).

A general hedonic model in which the 'product' of any given hotel H is the depiction of a set of attributes, this is also found in the study of Espinet et al. (2003), such that

$$h_i = (a_{i1}, a_{i2}, a_{i3}, \dots, a_{ik}, \dots, a_{im}) \dots\dots \quad (3.1)$$

Where i= 1… n the hotel numbers and ik (k= 1… m), each of hotel's attributes.

So, hedonic price function for hotels will be as…

$$P_{i=}\ p\ (a_{i1}, a_{i2}, a_{i3}, \dots, a_{ik}, \dots, a_{im}) \dots\dots \quad (3.2)$$

The functional form of P is to be constant across hotels, however the involvement of each and every attribute may vary from one hotel to another hotel.

Unlike the typical price models that have some measure of quantity on the right-hand side of the equation, hedonic price models express the price of an item, the dependent variable, as a function of the measures of the quality (characteristics) of that item, the independent variables (Studenmund, 2011). Researchers used various influencing factors of room rates of the hotels. Zhang et al. (2011) and Hung et al. (2010) links the room rates with the total number of room a hotel have. Similarly the larger the hotel the larger the price will be according to the study. Inversely, Juaneda et al. (2011) argued that the greater number of rooms may have a somewhat negative impact in the situation of seaside hotels, on the room rate. If two hotels have same status but have different numbers of rooms, prices becomes slight low of the hotel having greater number of room as compared to other. Moreover more the size of the rooms, the higher will be the rate (Chen & Rothschild, 2010; Monty & Skidmore, 2003). Many studies such as Lee and Jang (2012), Shoval (2006), Monty and Skidmore (2003) and Thrane (2007) were of the view that location is also the major hotel elements that can change hotel price. It can be positive and negative impact according to the situation. Lee and Jang (2012) stated that the hotel close to the airport or other transport system also charges more as compared to the others. Some researchers found hotel chain as an important determinant of the hotel room prices (Chen & Rothschild, 2010; Lee & Jang, 2012; Thrane, 2007; Wu, Costa, & Teare, 1998). In addition, Chen and Rothschild (2010) stated that in Taipei room prices are more if the hotel has a café & bar. Similarly availability of the internet, business center, TV, swimming pool, fitness room etc. also important factors which change the room prices to some extent because these provide

utility to the customers (Chen & Rothschild, 2010; Sard, Aguiló, & Martín, 2002; White & Mulligan, 2002).

3.3 Study Site

Being the Pakistan's capital of since Sixties, according to a very unify plan Islamabad was fabricated. Islamabad is protected by the Himalayas, Margalla Hills, and the home-grown of exceptional species, birds, deer, and even porcupines. Numerous rock climbing and ice climbing paths, and Daman-e-Koh, which have splendid view of whole city, Rawal Dam and even Faisal Mosque, biggest in South Asia (Pakistan Tourism Development Cooperation 2013). Rawal Lake is famous tourist place it fulfills the need of water in Islamabad and Rawalpindi. This artificial lake covers the area of 8.8 sq. km. Tourist come here for diving, boating and water skimming services. Islamabad has rich places for tourist's interest comprising of various art galleries, museums. There are 78 famous hotels in Islamabad in which 21 hotels are those which are assigned as 3-4 stars. There is no 5-star hotel in Pakistan (Pakistan Tourism Development Corporation, 2013). In this study, 20 hotels of Rawalpindi and Islamabad have been selected (See appendix-1). Blue area is selected as the city center of isamabad.

Rawalpindi is within the drive of 15 minutes from Islamabad and is an energetic active town full of Bazaars and bouncing life. People want to spend holidays there and they have a lot of variety of goods from gorgeous carpets to Kashmir silver which they can purchase.

Apart from the tourists, people also visit Islamabad and Rawalpindi for other purposes such as business, visas and treatment in hospitals. But in these hotels, majority of the costumers

are the tourists. Similarly, the important tourist site, Murre is close to Islamabad and majority of the outside visitors visit it through Islamabad.

3.4. Data and Methodology

3.4.1 Nature of Data and its Source

There are 78 hotels operating in Islamabad. But most of the hotels are not star assigned hotels so we have to exclude those in our study. There are 21 major 'three' and 'four' star hotels in Islamabad. Rests of the hotels are two star and one star hotel. The most popular, also covered in the study, hotels in Islamabad and Rawalpindi are: Serena hotel Islamabad, Envoy continental, Marriott hotel Islamabad, hotel crown plaza Islamabad and Islamabad hotel. Similarly two most visited hotel of Rawalpindi are Pearl Continental Rawalpindi and Shalimar hotel Rawalpindi. I selected 3 and 4 star hotels located in Islamabad and Rawalpindi. We are taking only three and four star hotels in our sample because there is no five star hotel in Pakistan and the costumers mainly visit these hotels. The study has used panel primary data which we have collected from 20 hotels for the time period 2010-2015 through structured questionnaire (see appendix-2). Time period selected on the basis of data availability. The information about hotels attributes and room rates were obtained from the managers of the hotels.

3.4.2 Econometric Model

This study applied Hedonic price model which has widely been used in the available literature such as Monty and Skidmore (2003); D. E. Andersson (2010); Chen and Rothschild (2010) Thrane (2007); F. Andersson (2013). The following model was

estimated to show the impact of socioeconomic and environmental factors on room rates charges.

$$RR_{it} = \beta_0 + \beta_1 str_{it} + \beta_2 chn_{it} + \beta_3 hot_{it} + \beta_4 gdn_{it} + \beta_5 rsv_{it} + \beta_6 cnt_{it} + \beta_7 grd_{it} + \beta_8 cnf_{it} + \beta_9 dst_{it} + \beta_{10} sht_{it} + \beta_{11} out_{it} + \beta_{12} gym_{it} + \beta_{13} avg_{it} + \beta_{14} caf_{it} + \beta_{15} cam_{it} + \beta_{16} pol_{it} + \beta_{17} in_{it} + \beta_{18} bra_{it} + \epsilon_{it}$$

Where i represent the cross section and t represents the time period. The description of the variables is given in Table 3.1.

Table 3.1: Description and expected sign of study variables

Abbreviation	variables	Description of variables	Expected sign
RR	Room rate	Room rate per night for double Bed room in Rawalpindi-Islamabad in rupees (Dependent Variable)	
str	Hotel star	Dummy variable taking value 1 if Hotel has four-star rating and 0 otherwise	+
chn	Chain affiliation	Dummy variable taking value 1 if Hotel is associated with a chain and 0 otherwise	+
hot	Hot tub	Dummy variable taking value 1 if Hotel has hot tub and 0 otherwise	+
pol	Swimming pool	Dummy variable taking value 1 if Hotel has Swimming pool and 0 otherwise	+
gdn	Garden/terrace	Dummy variable taking value 1 if Hotel has Garden/Terrace and 0 otherwise	+
rsv	Resevation	Dummy variable taking value 1 if Hotel has online reservation of hotel room and 0 otherwise	+ -
cnt	Location	Dummy variable taking value 1 if Hotel is located within city center 0 otherwise	-
grd	No of guards	number of security Guards in hotel	+
Cnf	No of conf rooms	number of conference rooms in hotel	+
bra	American breakfast	Dummy variable taking value 1if hotel provide American breakfast and 0 otherwise	
avg	Avg no cofrences	Average number of conferences held per month in hotel	+
caf	No of cafe	Number of café in hotel	+
dst	Distance	Distance to airport (in km)	-
In	Indian breakfast	Dummy variable taking value 1 if Hotel provide Indian breakfast and 0 otherwise	+

sht	Shuttle bus	Dummy variable taking value 1 if Hotel has shuttle bus service out of city and 0 otherwise	+
cam	No of cameras	Number of cameras in hotel	+
out	Sht out of city	Dummy variable taking value 1 if Hotel has shuttle bus service for out of city and 0 otherwise	+
gym	Fitness room	Dummy variable taking value 1 if Hotel has fitness room and 0 otherwise	+

After a field visit it was found that majority of the rooms rented in the hotels were double bed room and such rooms were also cheaper as compared to single bed rooms. Majority of the features of both of the room were the same. Hotels providing more facilities will charge more as compared to others but some facilities have strong or weak effect on room prices. For example in our case it is expected that hotel providing mini bar and hot tub in attached bath will charge more as compare to hotels not having bar and hot tub. Similarly spacious rooms that have terrace and garden, probably increases the cost of maintenance, automatically leads towards higher prices of rooms. Similarly GYM and shuttle bus services from hotel to the airport and airport to hotel as well as to somewhere else within and out of city ultimately increases the cost of hotels. Therefore, these hotel characteristics have positive expected relationship with room rates. Online services have chance of either positive or negative affect because online services facilitates the consumer and people could easily book rooms and in case of emergency could cancel also could see the features and facilities according to that they can book hotel rooms, so hotel could charge for facilitating the customers. Distance of hotel from airport may also have negative or positive impact because some people want to live near the transportation services for the easiness of moving and some wants to avoid these because of noise and air pollution congestions of traffic etc.

Star and chain affiliation of hotels are strongly expected to have positive impact on room rates. Some other features of hotel like swimming pool, availability of café, availability of hot tub in attached washrooms also expected positive related to room rates.

Similarly, number of conference rooms in any hotel and average number of conferences held per month also expected to have positive relation with room rates because large number of conference rooms exist in large hotels and these hotels also provide more facilities and better services during conference, so high prices are expected.

For the analysis of panel data, Fixed and Random Effects Model are widely used. Fixed effects presumes that the individual precise effect is correlated with the independent variables while random effects presumes that the individual precise effects are uncorrelated to the independent variable. This study also applies panel data techniques such as random and fixed effect models while the appropriate model out of these two has been identified through Hausman test.

Chapter IV

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents details of the descriptive statistics followed by estimation and interpretation of the results of econometric models. These are detailed in subsequent section.

4.2 Descriptive Statistics of Variables

In this research note, the hedonic price method is used to estimate the effect of specific environmental, recreational, security and other attributes of hotels. In our analysis, the number of hotel attributes included both quantitative and qualitative variables. The quantitative variables were the number of guards, number of cameras, number of café, average number of conferences held per month, distance from airport which is measured in kilometers and number of conference rooms. The qualitative attributes include hotel location, amenities and other features of hotels. The descriptive statistics of the qualitative variables are given in Table 4.1. There are 20 hotels in the sample of this study and the frequency of Star variable shows that there are 9 hotels which are assigned 4 star hotels, while reaming 11 are 3star hotels. Similarly 9 hotels in 2010 were chain assigned, Islamabad hotel was also chain hotel till 2011 after that this hotel became independent, now 8 hotels are chain hotels in this study. Frequency of shuttle bus service shows till 2013 fourteen hotels were providing the facility of pick and drop from hotel to airport and airport to hotels, in 2014 Pak palace hotel also started this service for the satisfaction of their customers. Similarly shuttle bus service from hotel to out of city were offering 6 hotels in

2010 now 7 hotels are giving this facility. Indian breakfast providing by only 7 hotels. 75 percent of hotels in the study are providing American breakfast to their customers. Hot tubs are available in 17 hotels out of 20 hotels which shows high frequency of this variable. Table 4.1 show that in 2010 only 13 hotels were giving the facility of online reservation but now 17 hotels in the study offering this facility. Fifteen hotels were giving the facility of American breakfast within hotel.

Table 4.1: Frequency Distribution of the qualitative Variables

Variable	**Frequency**					
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Hotels having 4star	9	9	9	9	9	9
Chain affiliation	9	9	8	8	8	8
Availability of hot tub	17	17	17	17	17	17
Availability of Pool	7	7	6	6	6	6
Garden\terrace	15	15	15	15	16	16
Online Reservation	13	15	17	17	17	17
Location of the hotel	14	14	14	14	14	14
Indian breakfast	7	7	7	7	7	7
Shuttle service(hotel to airport)	14	14	14	14	15	15
Shuttle service (out of city)	6	6	6	7	7	7
Fitness Room	10	10	10	10	10	10
American breakfast	15	15	15	15	15	15

Environmental/recreational qualitative variables used in this study are fitness center, location of the hotel, swimming pool and garden\terrace. Recreational activity Fitness room are in 10 hotels, almost all four star and some three star hotels are providing this facility. Swimming pool facility providing by seven 4 star hotels only in 2010 and 2011. But in the year 2012 Shalimar hotel Rawalpindi ended this facility for the renovation purposes still they are not offering this facility. Swimming pool is available only in six hotels of Rawalpindi and Islamabad. Environmental variable, availability of garden and terrace also has high frequency. Garden/terrace were offering by 15 hotels till 2013, from 2014 PTDC hotel also offering this facility by assessing the customer's concern about environment.

The details of the descriptive statistics are given in table 4.2. Mean value of Room rate is Rs.13048.94 and the maximum room rate of per night stay of double bed room in Islamabad and Rawalpindi is Rs.23200 and this is the current room rate of Serena hotel in Islamabad, which is charging highest room rate. Minimum value of room rates is 3500, which is charged by Royalton hotel Rawalpindi in the year 2010. Now this hotel is charging 4000 at per night stay of double bedroom. And median is 12543.00 of room rates variable. Similarly in independent quantitative variable, mean value of number of guards is 44.092.maximun value is 250.00, which is the numbers of guards at Serena hotel in 2015. Minimum number of guards in the study is 3.00 and these were in the Royalton and De Mal hotel of Rawalpindi in the year 2010. Now the number of guards are also increased there. Another independent quantitative is the number of café and the mean of this variable is 1.784. The maximum value is four which is at De Papae hotel Rawalpindi. This hotel have four cafés, highest in the study.

Table 4.2: Descriptive Statistics for quantitative Variables

Name of variables	Unit	Mean	Median	Maximum	Minimum
Room rate	Rs per night	13048.9	12543.0	23200	3500
Number of guard	Numbers	44.092	14.00	250.00	3.00
Number of café	Numbers	1.784	2.00	4.00	0.00
conferences held per month	Avg. No.	57.909	25.00	225.00	2.00
Distance from airport	Km	14.690	15.150	21.600	7.300
Number of conference rooms	Numbers	3.650	2.500	13.00	0.00
Number of security cameras	Numbers	32.642	20.00	160.00	0.00
Size of room	Sq. feet	160.00	174.00	300.00	100.00

Average numbers of conferences held per month is another independent variable having the mean of 57.909 and median value is 25.00.the maximum number of conferences held per month is 225. The largest numbers of conferences holding per month are in Marriott hotel in Islamabad.

The distance of hotel from airport contains the mean value 14.69 km. Maximum distance value is 21.60 km, which shows the distance of Marriott hotel from airport which is the highest distance in our studied hotels and 2nd highest distance value is of Avari express which is 21.500 km. Minimum distance having the value of 7.300 km, Akbar and Shalimar hotel Rawalpindi has the lowest distance they located nearby the airport. Correspondingly

the mean value of the number of conference rooms is 3.650 and maximum numbers of conference rooms are in Serena hotel, having 13 conference rooms.

Numbers of CCTV cameras in hotels having the mean value 32.64.median value is 20 and maximum value 160.00 which is in pc hotel Rawalpindi and minimum value 0.00 is of DE PAPAE hotel Rawalpindi in the year 2010 but now they have fixed video cameras in the year 2012. The mean value of the size of rooms of double bed room is 160.00 square feet. The largest size of double bed room in square feet is 300.00, Islamabad club having these largest size bed rooms in Islamabad. Second largest bed rooms are in pc hotel Rawalpindi and Islamabad hotel both having the same size 252 square feet rooms, and then after these Marriott hotel and Serena hotel Islamabad having 240 and 225 square feet respectively.

In recent years Terrorism (bombing) in Pakistan has come to be a foremost and highly damaging issue. The annual deaths were 164 in 2003 which increased to 3318 in 2009. 35,000 Pakistanis were killed from 2001 to May 2011. The capital of Pakistan (Islamabad) also has become the victim of this phenomenon. So each and every sector is disturb, Marriot hotel in Islamabad also become target of bomb blast on 20 September 2008. At least 54 people were killed and 266 injured, in which Pakistani and some foreigners were killed and injured. Marriot hotel was considered the most impressive hotel, in the capital, situated nearby, Embassies, government buildings and high commissions.

After all this foreigners starts hesitate to visit and stay in hotels of Pakistan. Consequently by assessing the demand of state and customers insurance almost all hotels in Islamabad and Rawalpindi took serious precautionary measures regarding security. Due to this fact

we have included security variables such as number of security guards, number of CCTV cameras and alarm system

The number of security guards varied across the hotels. Marriot hotel which is four star hotels have high number of guard among all, back in the year 2010 there were 200 guards in Marriott hotel and now in 2015 number of guards have increased up to 250. Serena hotel which is also four star hotels located near convention center Islamabad, in year 2010 there were 150 guards. Within period six years number of guards increased from 150 to 200. Same in the case of Rawalpindi, there were 140 guars in the year 2010 in Pearl Continental hotel which increased to 180 in the year 2015 (See Appendix-3).

Ramada hotel had almost 40 cameras in the year 2010 and gradually by assessing the demand they fixed more cameras in hotel. Pearl continental hotel Rawalpindi having 160 number of CCTV cameras which is the largest as compared to other hotels (See Appendix-3).

4.3 Econometric analysis of the determinant of hotel room rates

For the selection of model between random effect and fixed effect we have applied the Hausman test. The Hausman test statistic (Chi-Square) was estimated as 24.5818 with 16 df followed by its probability 0.0775. This means that random effect model with Panel Estimated Generalized Least Square (Panel EGLS) technique is the appropriate one for our study which automatically take cares of heteroscedasticity and problem of autocorrelation.

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Table 4.3: Estimated results from the hedonic pricing model				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	6.534140	0.109194	59.83985	0.0000
LNAVG	0.001672	0.016368	0.102176	0.9188
LNDST	0.723439	0.038147	18.96439	0.0000
LNCAF	0.022835	0.006877	3.320467	0.0013
LNCNF	-0.108325	0.024903	-4.349948	0.0000
LNGRD	0.033193	0.007790	4.261013	0.0000
LNCAM	0.036490	0.010917	3.342476	0.0012
GDN	0.203881	0.022477	9.070693	0.0000
GYM	0.574275	0.036973	15.53225	0.0000
POL	0.015987	0.011137	1.435527	0.1542
RSV	-0.064770	0.016388	-3.952174	0.0001
CNT	-0.160400	0.031500	-5.092059	0.0000
HOT	0.037009	0.008287	4.465722	0.0000
STR	0.071408	0.021397	3.337234	0.0012
SHT	0.236168	0.023852	9.901317	0.0000
OUT	0.127247	0.024903	5.109707	0.0000
CHN	0.010474	0.045688	0.229255	0.8191
IN	-0.178783	0.042939	-4.163648	0.0001
BRA	0.103007	0.035323	2.916132	0.0044
R-squared	0.953736			
Adjusted R-square	0.945491			

* The dependent variable is the rate of the double bed room in the hotels

In the regression results the STAR coefficient has positive and statistically significant impact on the room rates. These results are also in line with the studies of Vilchez (2013), Thrane (2005); Kefela (2014). This is because a high a star hotel may have greater facilities

This is because a high a star hotel may have greater facilities and satisfaction level. Four star hotel along with hotel amenities may have environmental and recreational facilities i.e. swimming pool, terrace with room, airy rooms etc.

The coefficient of CHAIN variable shows positive but statistically insignificant relationship with room rate. This is because if a hotel is chain then definitely they are providing luxury and good accommodations to the tourist as well as to other customers. It's also a fact that in the Islamabad & Rawalpindi sample, there are only 6 international hotels or chain hotels such as Best Western, Marriott, Serena, Ramada, Avari Express and PC. The reason of insignificance of chain variable is that many hotels in Islamabad and Rawalpindi are not associated with the international chain however they compromise high class services. Chen and Rothschild (2010) also found a positive but insignificant relationship with room rate.

Hot tub is highly significant and positively related with room rates. People are more willing to pay in the presence of hot tub in their attached washrooms Monty and Skidmore (2003). Hot tub also found significant with other room facilities in the study of Goldberg, Green, and Wind (1984). Online reservation is significant but negatively related with room rents in this study. Awareness of customers bounds the hotel owners to charge extra price and earn abnormal profit. The coefficient of this variable shows that the online reservation reinforce the decrease in the prices of rooms. Conventional concepts propose that the

purchasing or booking on Internet will cut down the prices so lead to perfectly economic and competitive prices. Though, there is still conflicting sign demonstrating that online prices some time are not lower than other offline prices Kung, Monroe, and Cox (2002). So this is a conflict in some cases there is positive impact and in some cases there is negative impact of internet world just like present study.

Number of conference rooms is negative in present study. The reason behind this is that people hire conference rooms for business purposes and ready to pay less for conference rooms. Conference room found insignificant in the study of GuShin et al. (2011). American breakfast (BRA) also significant and positive in this study. Hotels having this facility of breakfast charge more from their customers. Breakfast also significant and people have willingness to pay for breakfast in the study of Monty and Skidmore (2003). Breakfast also effect room rates positively in the study of White and Mulligan (2002).

One very important and highly significant variable is the facility of shuttle bus service (SHT) from hotel to airport and from airport to hotel. In Rothschild study in Tiepie this variable is insignificant. In the prospects of Pakistan this is significant because of severe issue of security now international tourist do not relay or trust on the local transport rather they seeks their destination with the pick and drop facility.

The facility of shuttle bus service (SHT) from hotel to airport and from airport to hotel is statistically significant. Although Rothschild (2010) found this relationship as insignificant but in case of Pakistan because of severe issue of security, international tourist do not trust on the local transport rather they require their destination with the pick and drop facility.

Similarly the service to drop out the visitors, out of Islamabad and Rawalpindi is also statistically significant. Some major hotels such as Serena, Marriott, Dreamland, Avari Express, DE Papae hotel Rawalpindi etc. have this service to facilitate their customers. . However the facility of Indian breakfast (IN) has no share in determining the prices of rooms it negatively affects the room prices

Average number of conferences held per month (LNAVG) also have positively related with room rates but its coefficient statistically insignificant. The number of café in a hotel (LNCAF) is positively related with room prices and its coefficient is also statistically significant. According to Foster (1995), hotel is a construction or building built precisely to offer room to the tourists or customers, with food and refreshment on the same location. BAR/CAFÉ was also found significant determinants of Tiepie hotels rates Chen and Rothschild (2010).

This study highlights the usefulness of the hedonic pricing technique in the tourism industry that how each attribute of hotels including environmental and security variables effect the room rate. Managing environmental attributes of the tourist product is very important for the success of tourist destinations. In this study are availability of garden and terrace, location of the hotel, distance from airport, swimming pool, fitness room and two security variables i.e. number of guards and number of security cameras are Environmental variables. The detailed description of environmental/recreational variables are given below:

Location of the hotel is environmental variable represented by the (CNT) shows that whether the hotel is located within the city center or not. Location of the hotel (CNT) has

negative impact on the room rates with statistically significant coefficient. Similar result was also found by Chen and Rothschild (2010). The reason is many people comes for charming environment they desire to avoid the noise pollution of traffic and want to live in calm places. Same is in the case of Islamabad, because in the surrounding of Islamabad there are many tourist places and people normally come for enjoyment there and they want to enjoy nature rather than to stay in the overcrowding of traffic. The negative relationship between room prices and location of the hotels is due to the fact that these hotels (located far from city center) offers an extensive variety of facilities such as sports amenities and hot springs. And the provision of these facilities is possible only at the big and open places. Just like Islamabad club which provide number of facilities, swimming pools, ridding and other games club.

The reason of insignificance of swimming pool in Islamabad and Rawalpindi is that there are only few hotels which have swimming pool in the sample. Raya Vilchez (2013) and Thrane (2007) also found swimming pool as insignificant variable for hotel room rates. In the case of Islamabad people come here for sightseeing and for visiting different tourist places while swimming may have less importance for them.

Availability and non-availability of the environmental variable garden and terrace in hotel (GDN), show positive relationship with room rates followed by statistically significant coefficient in the model estimated. Juaneda et al. (2011) found that a garden availability increases the charges of rooms by 2.80%. People who comes for enjoyment or business purposes they want a place in the hotel where they can spent their time in the fine atmosphere, therefore, garden and terrace provide them this opportunity. Similar relationship was also estimated by Vilchez (2013).

Distance from airport statistically significant and positively relate to the room rate. This show the environmental concerns of people. Hotel which have more distance from airport charge high prices. Surroundings of airport usually have more crowd and noise pollution therefore people avoid to live there. In this study relative importance of this variable with other variables almost reached at 19%. Hotels far from airport can provide more environmental and recreational activities as compared to those hotel which located near the airport. Recreational activities i.e. pool, child play room, game room, fitness room are 11% relatively more important, Goldberg et al. (1984).

Recreational variable Fitness room (GYM) is highly significant and positively related with independent variable in this study .The superior the quality and variety of gyms and leisure facilities, the higher will be the prices of rooms GuShin et al. (2011). Fitness room is also significant in the study of Chen and Rothschild (2010).

The number of security guards (GRD) is positively related with room rates and also statistically significant. After the incident of Marriott hotel blast on 20 September 2008, hotel mangers as well as customers have great concern about the security of the hotel. This is the reason every hotel has increased the number of guards in recent years (details are given in appendix-3). Stephen et.al (2014) also used the numbers of guards and security cameras and found that these are important variables for room rates. Installation of security cameras have significant and positive impact on room rates. As the number of cameras increase in the hotel, hotel owners will charge more prices of rooms. People want calm, peaceful as well as secure environment. Number of cameras have 4% more relative importance. The number of cameras therefore increased in almost all hotel of Rawalpindi and Islamabad during the period of 2010-2015 (details are given in appendix-4).

CHAPTER V

CONCLUSION, SUGGESTION AND FURTHER RESEARCH

5.1 Conclusion

This study applied the hedonic price model to estimate the effect environmental, security and other variables of hotels on the room rates in Islamabad and Rawalpindi. The hotel attributes included were Star, breakfast, hot tub, online reservation, Conference Rooms, Shuttle Bus Services, Average number of conferences and Cafe. Environmental/recreational variables were fitness room, location, garden/terrace, and distance from airport, swimming pool and security variables. Main findings of the study are given below:

- Environmental/recreational variables i.e. fitness room, distance from airport and garden/terrace have positive impact on room rates and statistically highly significant in the present study.
- Hotel amenities i.e. number of Cafe, Average number of Conferences, hot tub, American breakfast, star, chain, online reservation and Shuttle Bus Services statistically significant and have positive relationship with room rates of hotels.
- Online reservation and location of the hotel (within city center) are statistically significant but have negative relationship with room rates.
- Security variables i.e. number of guards and cameras have positive relationship with room rates and statistically highly significant.

5.2 Suggestions

- Key issue identified in this study, the environmental protection and proper security measures, enhance the success of the business.
- Tour operators can took benefit from the results of this study, as it not only provides a guideline to pricing policies, but also can assist them to determine an appropriate range of facilities that enhance the satisfaction of their customers.
- The results of this study provides useful guideline to investors for the selection of hotel location, as the study show how location decisions, if not properly taken, can negatively affect the prices.
- Garden and terrace is an important variable in this study, hotel administration should consider this variable and build garden in their hotels, in order to earn more revenue and customer's attraction.

5.3 Further Research

- This research is on supply side; information about attributes took from the hotel managers through questionnaire, now another research could be done on demand side by asking the question from customers through questionnaire, how much they are willing to pay for each attribute of hotel.
- This study have taken into consideration only three and four stars hotels, further research can be done on all star hotels to see the specific effect of hotel star ratings.
- Though, Islamabad having many tourist places in its surroundings, people comes here to spend their summer vacations, so seasonality effect can also be measure on room prices i.e. summer and winter.

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Appendix 1

Names of hotels	Address	Contact number
Serena hotel islamabad	Khyban-e-Suharbardi Opposite Convention Centre, Capital Territory, Islamabad, Pakistan	92-51-2874000
Marriott Islamabad	AghaKhanRoad,Shalimar5,Islamabad	92-51-2826121-35
Hotel Crown Plaza	99-E Jinnah Avenue Blue Area, Capital, Islamabad, Pakistan	92-51-2277890
Dreamland Motel	No 4 Islamabad Club Road, Islamabad, Pakis	92-051-2829072-76
Avari Xpress	Avari Xpress-School Road; address; H # 20, St.# 26, F/6-2,, Islamabad, Pakistan	92-051-2826101
Envoy Continental	111-East, Fazal-e-Haq Road Blue Area, Islamabad, Pakistan	92-51-2273971-7
DE PAPAE (INTL)	16-D, West Blue Area,	92-51-2273427
MARGALLA MOTEL	M-2, Near, Convention Centre,	92-51-2276500-4
PAK PALACE	Club Road, Near Rawal Dam	92-51-2279926
Hotel Shalimar	Off The Mall, Cantt. G.P.O.Box: 93 Rawalpindi	92-51-5562901
Hotel De Mall	Bank Road off Mall Road Rawalpindi	9251-5586835
Islamabad hotel	Civic Centre, Melody Chowk Islamabad	92-51-111273273
Best Western Hotel	6-Islamabad Club Road, P.O.Box 2319	92-51-2277460-68
royalton	G-254, Liaquat Road, Opp. Liaquat Bagh, Rawalpindi , Pakistan	92-051-5762300
Islamabad regency	-Club Road Islamabad	92-51-2276721-22
PTDC	17/22, The Mall Rawalpindi (AT THE END OF MURREE ROAD)	92-51-9272013
Ramada hotel islamabad	Islamabad Club Road, Islamabad, Pakistan	051-111-379-379
Hotel akbar	Liaqat Road, Opp: Liaquat Bagh, Rawalpindi	92-051-2878077
Islamabad club	The Islamabad Club Main Murree Road, Islamabad, Pakistan	92-051-9046244
Pearl-Continental Hotel	The Mall Road, PO Box# 211, Rawalpindi	92-051-5566011

Appendix 2 Questionnaire on Determinants of Hotels' Prices: A Case Study of Selected Hotels in Rawalpindi-Islamabad

Name of hotel: _____

Star of hotel: _____

Respondent Name: _____

Respondent Designation: _____

Date: _____ Time: _____

Please mark tick if the facility is available in the hotel.

years	chain	bar	Swim pool	Garden /terrace	Online reservation	Non smoking floor	net	location	24hour room service	Free parking
2010										
2011										
2012										
2013										
2014										
2015										

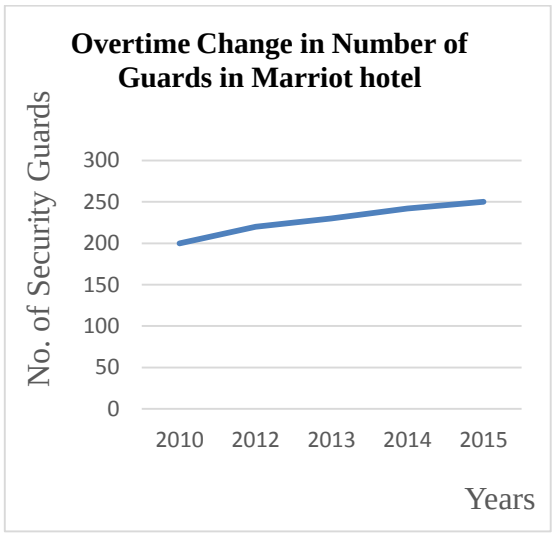
	No of security guards	No of Video Camera	No of business center	No of conference rooms	No of cafes	Distance from Airport.	Room Rate of Double Bed Room in Rs Per night
2010							
2011							
2012							
2013							
2014							
2015							

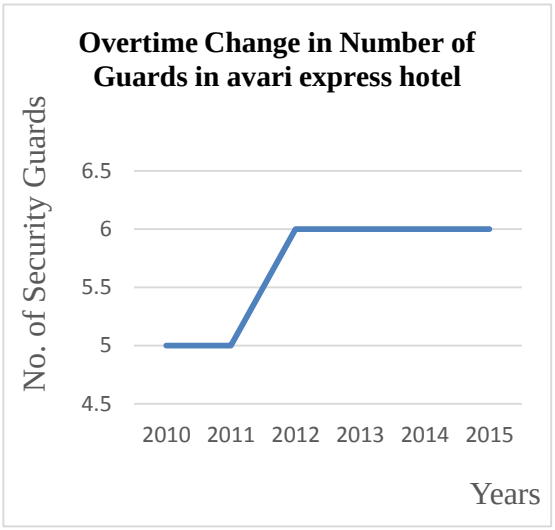
	Toiletries			Shuttle bus services		
	Hot tub	Shaving kit	Deodorant	Airport to hotel	Hotel to other places	Hotel to out of city
2010						
2011						
2012						
2013						
2014						
2015						

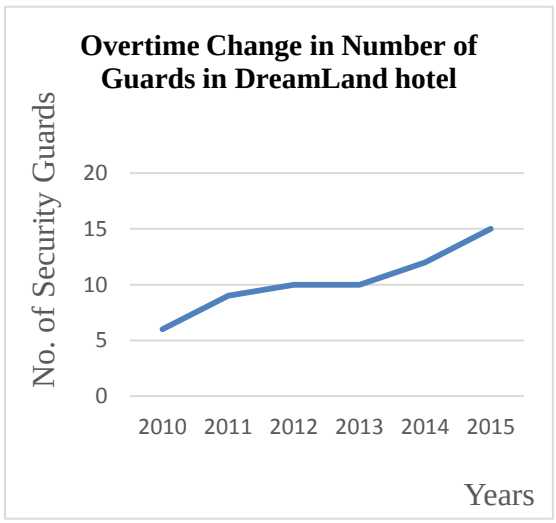
years	Television			Alarm system		
	Availability of cable	Facility to save programs	Facility to rewind program	Smoke detector alarm	Fire detector alarm	Alarm for calling security
2010						
2011						
2012						
2013						
2014						
2015						

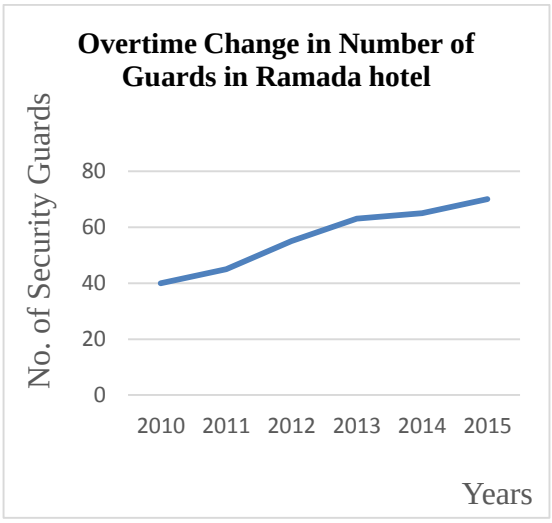
years	Fitness room			Breakfast		
	Leg extension machine	Shoulder press machine	PEC fly machines	Continental breakfast	American breakfast	Indian breakfast
2010						
2011						
2012						
2013						
2014						
2015						

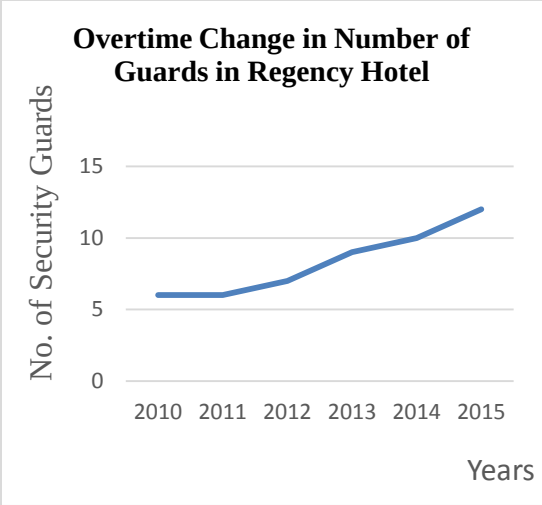
Appendix 3 Overtime change in the number of guards in hotels:



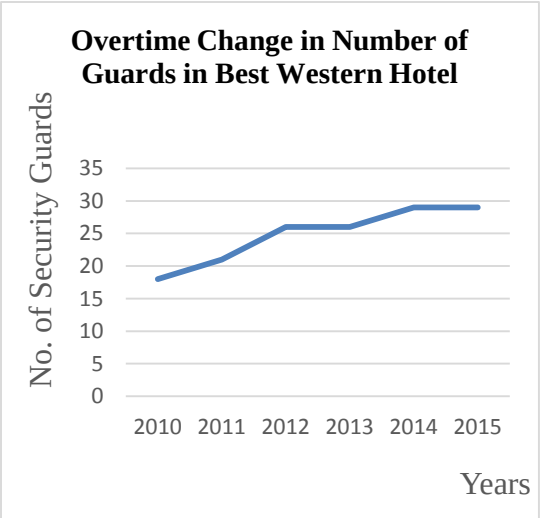







Overtime Change in Number of Guards in Regency Hotel
No. of Security Guards
15
10
5
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of Guards in Pak Palace Hotel
No. of Security Guards
5
4
3
2
1
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of Guards in Best Western Hotel
No. of Security Guards
35
30
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

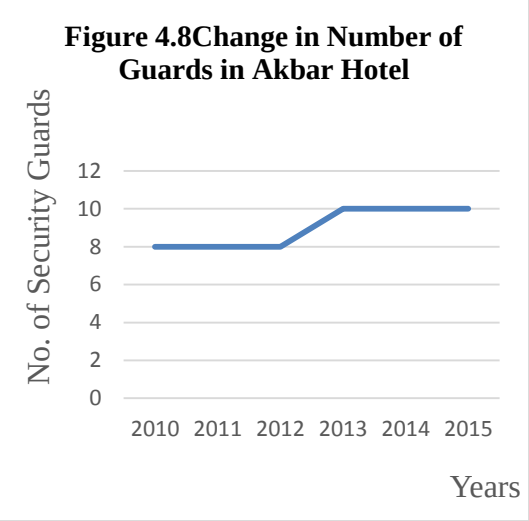
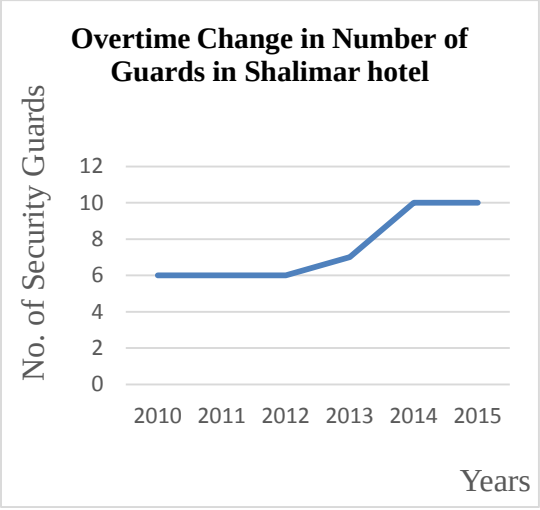
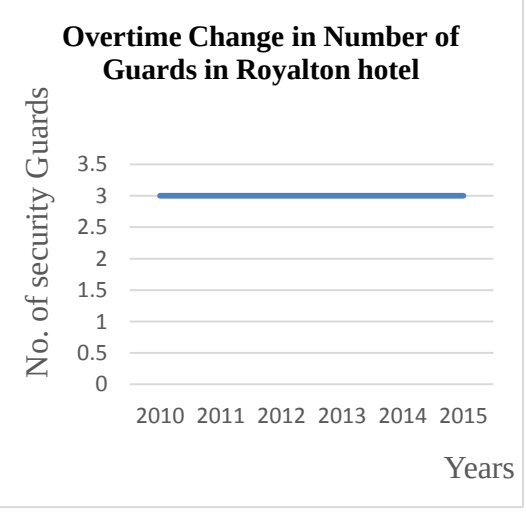
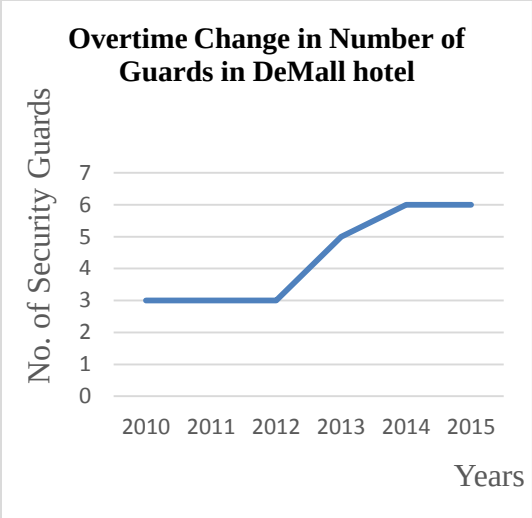
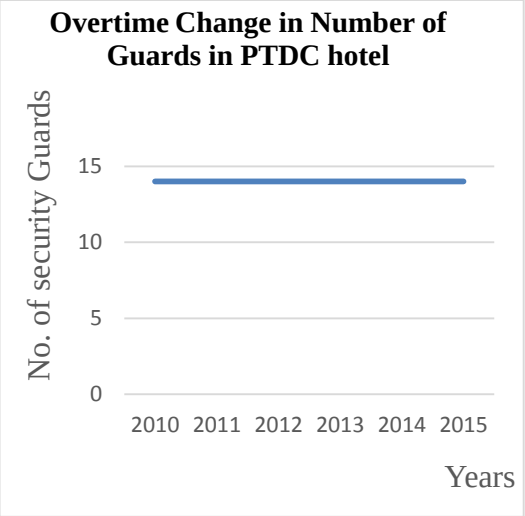


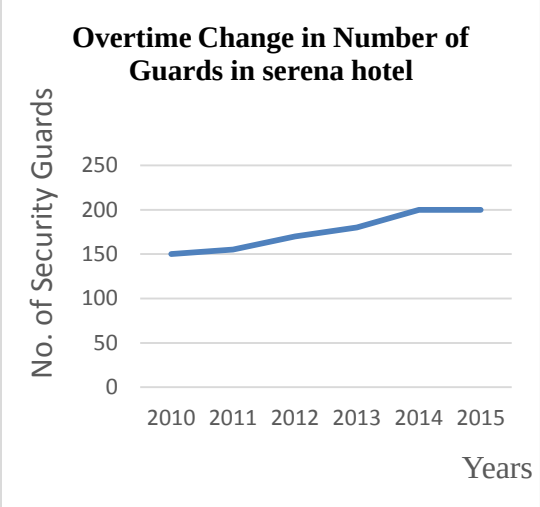
Figure 4.8Change in Number of Guards in Akbar Hotel
No. of Security Guards
12
10
8
6
4
2
0
2010 2011 2012 2013 2014 2015
Years

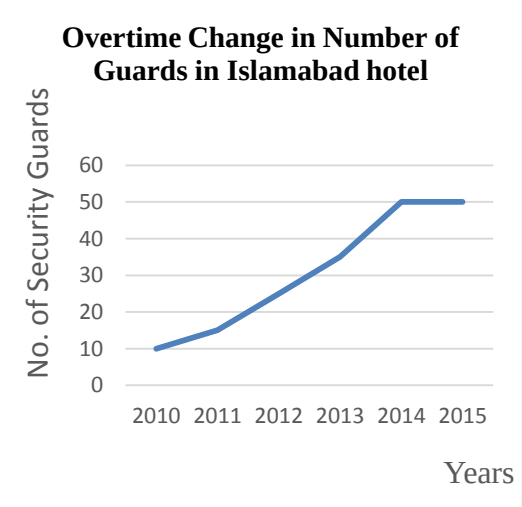

Overtime Change in Number of Guards in Shalimar hotel
No. of Security Guards
12
10
8
6
4
2
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of Guards in Royalton hotel
No. of security Guards
3.5
3
2.5
2
1.5
1
0.5
0
2010 2011 2012 2013 2014 2015
Years

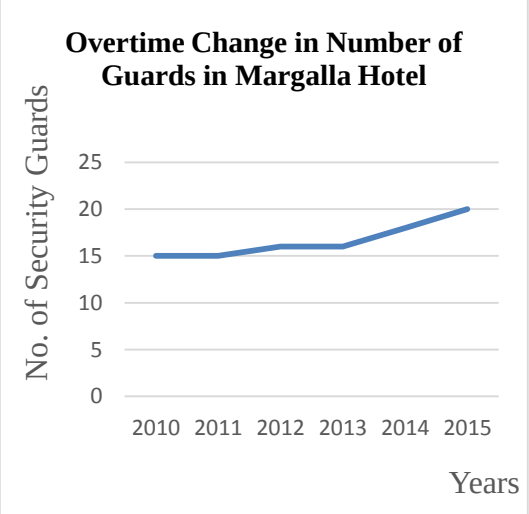

Overtime Change in Number of Guards in DeMall hotel
No. of Security Guards
7
6
5
4
3
2
1
0
2010 2011 2012 2013 2014 2015
Years

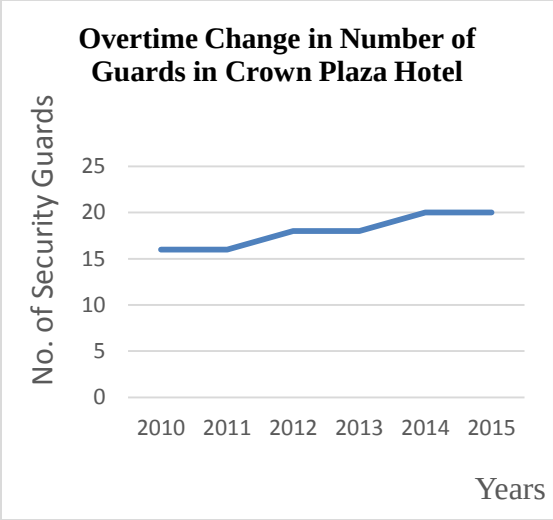

Overtime Change in Number of Guards in PTDC hotel
No. of security Guards
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

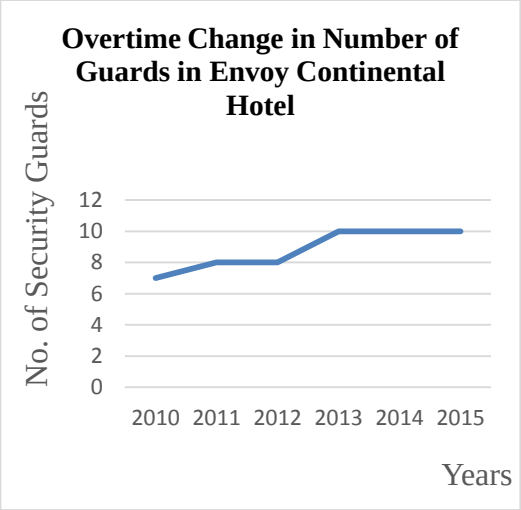

Overtime Change in Number of Guards in serena hotel
No. of Security Guards
250
200
150
100
50
0
2010 2011 2012 2013 2014 2015
Years

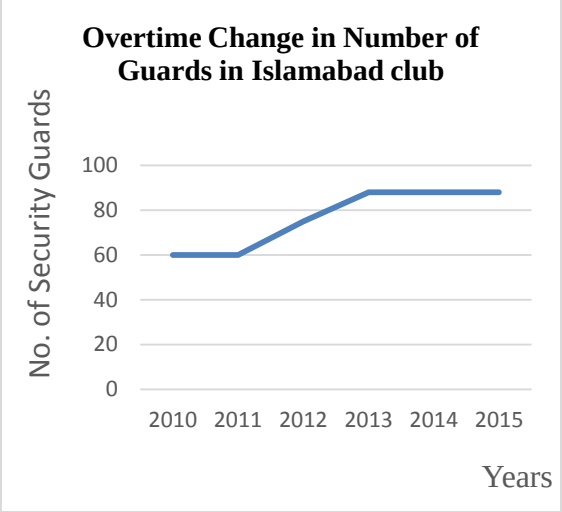

Overtime Change in Number of Guards in Islamabad hotel
No. of Security Guards
60
50
40
30
20
10
0
2010 2011 2012 2013 2014 2015
Years

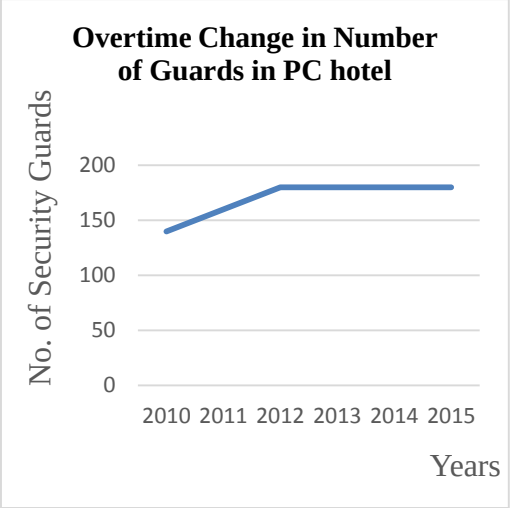

Overtime Change in Number of Guards in Depapae Hotel
No. of Security Guards
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of Guards in Margalla Hotel
No. of Security Guards
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

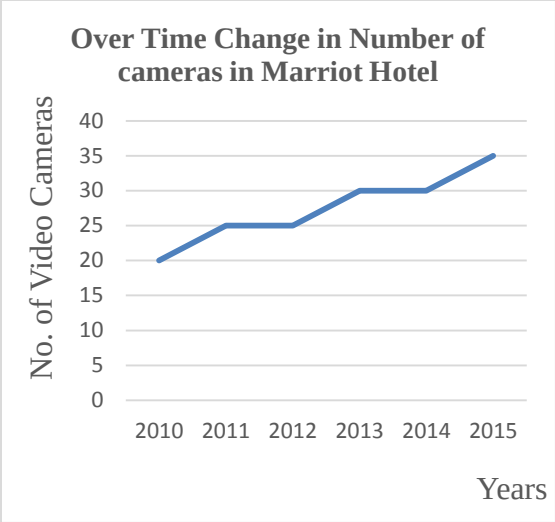

Overtime Change in Number of Guards in Crown Plaza Hotel
No. of Security Guards
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

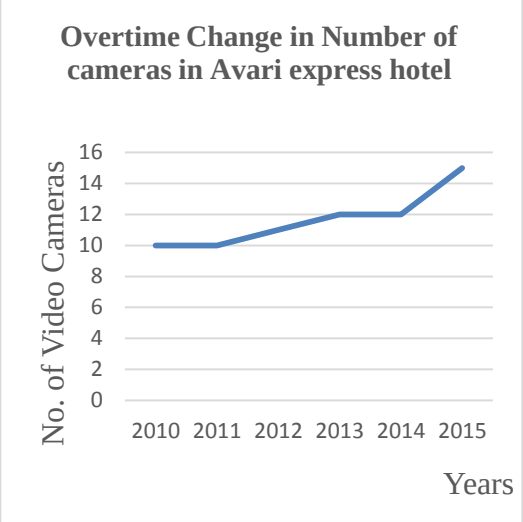

Overtime Change in Number of Guards in Envoy Continental Hotel
No. of Security Guards
12
10
8
6
4
2
0
2010 2011 2012 2013 2014 2015
Years

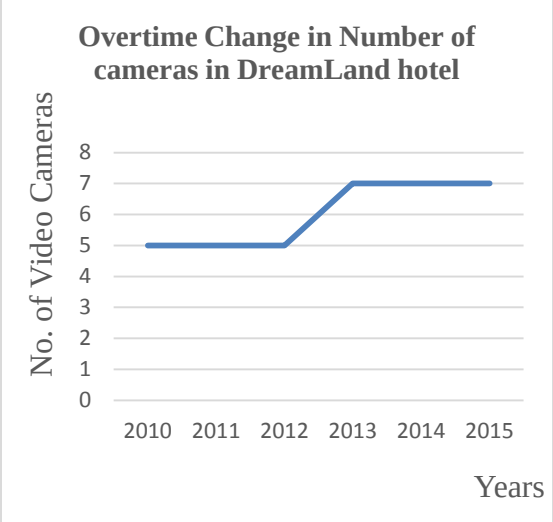

Overtime Change in Number of Guards in Islamabad club
No. of Security Guards
100
80
60
40
20
0
2010 2011 2012 2013 2014 2015
Years

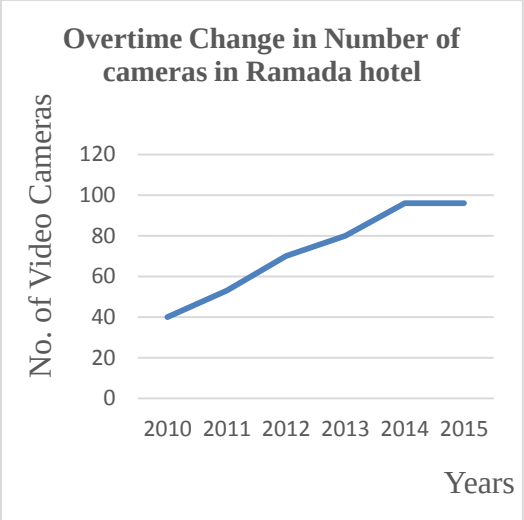

Overtime Change in Number of Guards in PC hotel
No. of Security Guards
200
150
100
50
0
2010 2011 2012 2013 2014 2015
Years

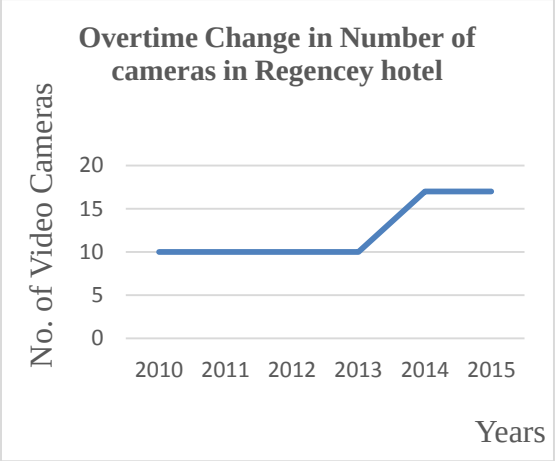
Appendix 4 Overtime change in the installation of cameras in hotels

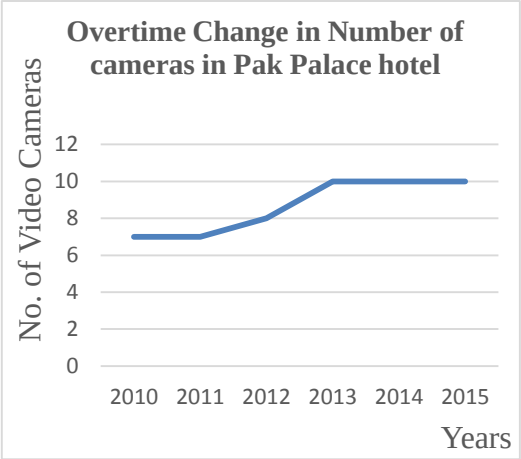












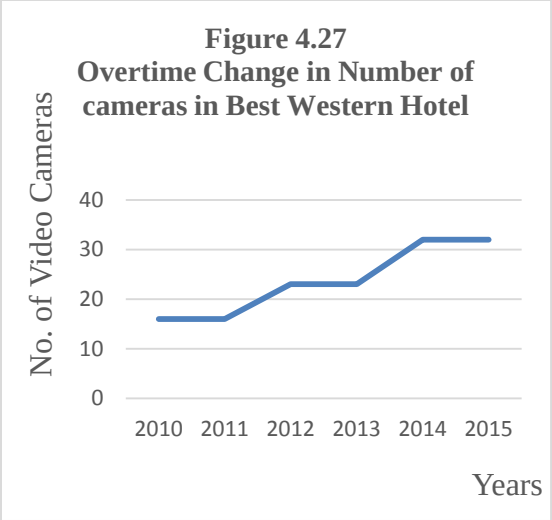


Figure 4.27
Overtime Change in Number of cameras in Best Western Hotel
No. of Video Cameras
40
30
20
10
0
2010 2011 2012 2013 2014 2015
Years

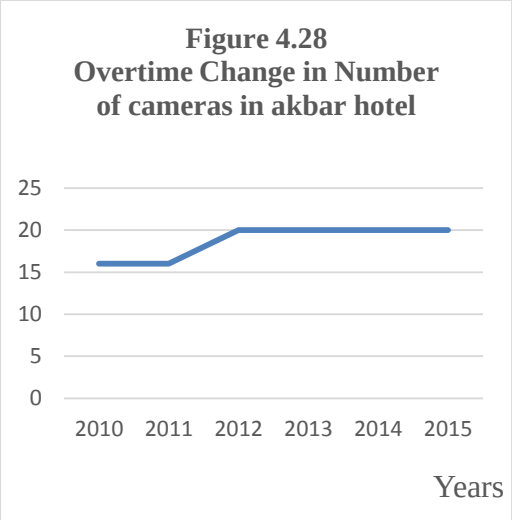
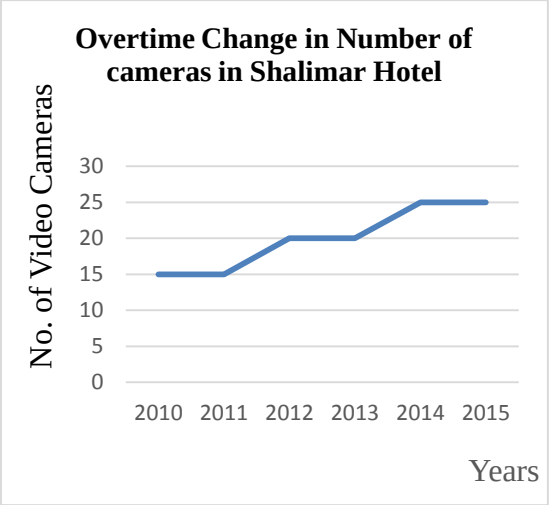
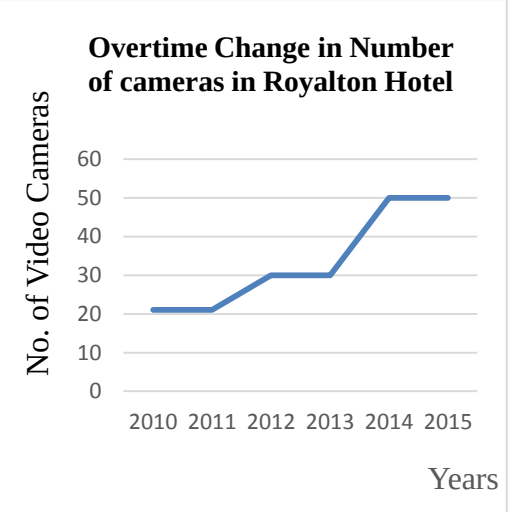
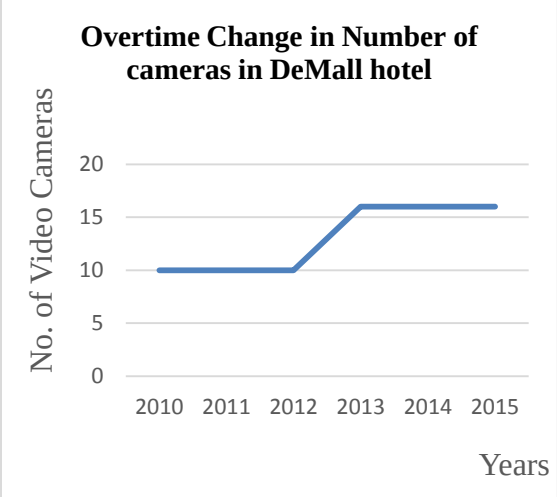
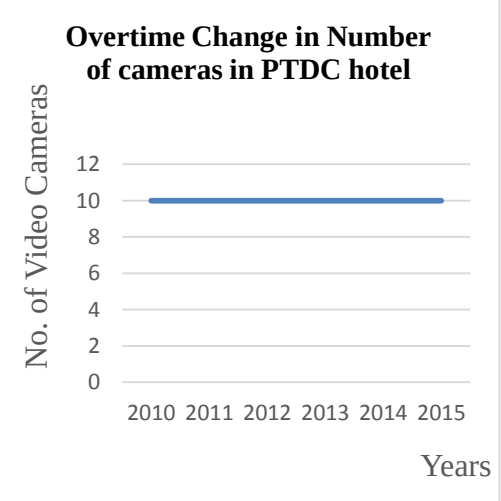


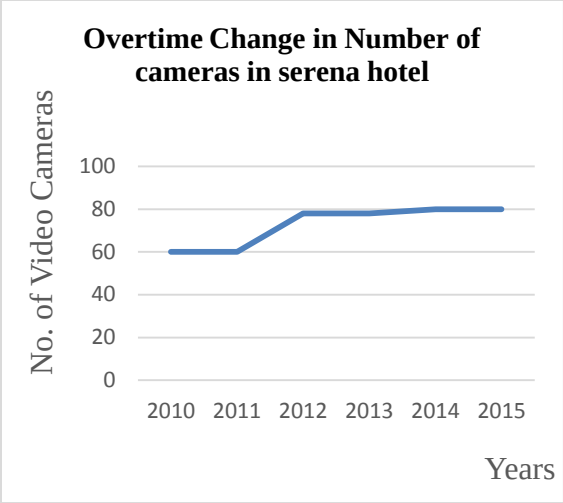
Figure 4.28
Overtime Change in Number of cameras in akbar hotel
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

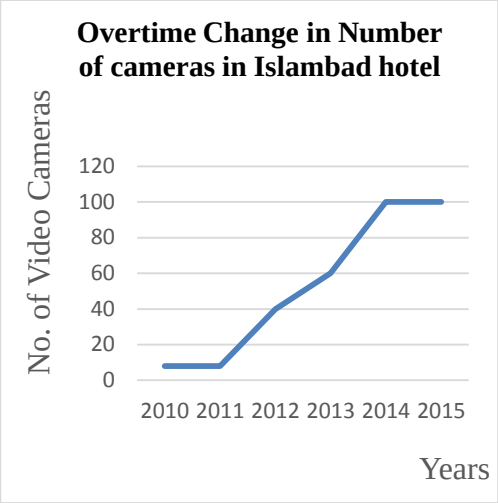

Overtime Change in Number of cameras in Shalimar Hotel
No. of Video Cameras
30
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

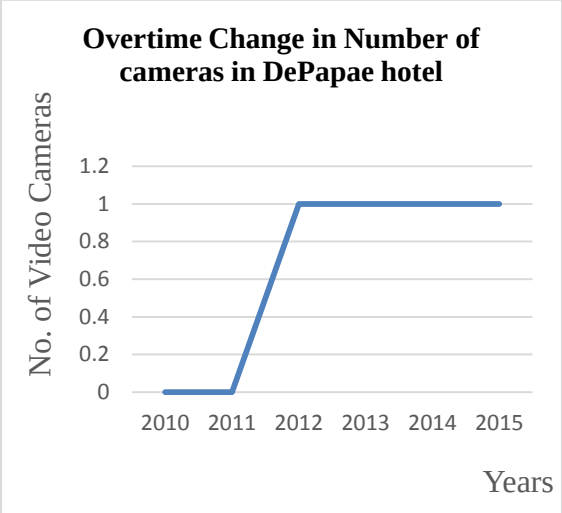

Overtime Change in Number of cameras in Royalton Hotel
No. of Video Cameras
60
50
40
30
20
10
0
2010 2011 2012 2013 2014 2015
Years

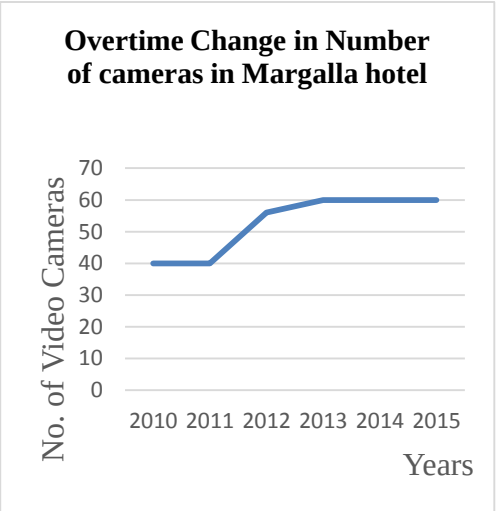

Overtime Change in Number of cameras in DeMall hotel
No. of Video Cameras
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years

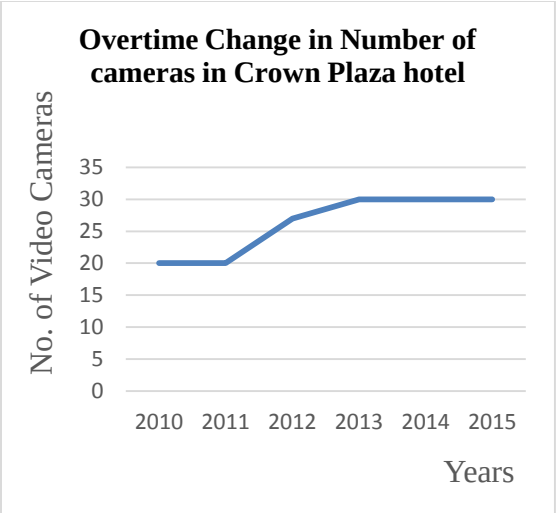

Overtime Change in Number of cameras in PTDC hotel
No. of Video Cameras
12
10
8
6
4
2
0
2010 2011 2012 2013 2014 2015
Years

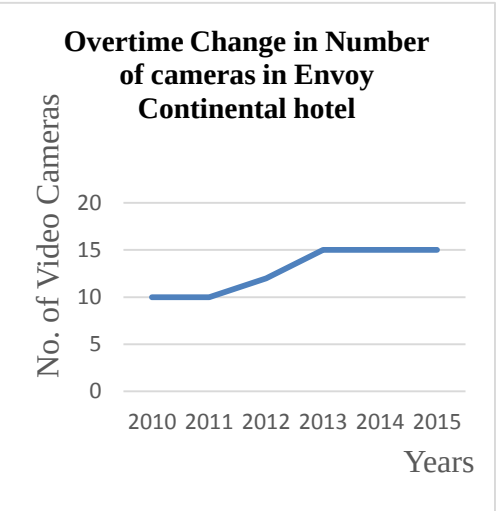

Overtime Change in Number of cameras in serena hotel
No. of Video Cameras
100
80
60
40
20
0
2010 2011 2012 2013 2014 2015
Years

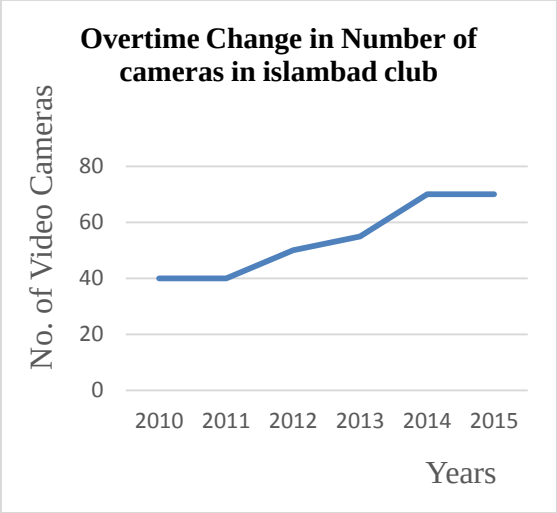

Overtime Change in Number of cameras in Islambad hotel
No. of Video Cameras
120
100
80
60
40
20
0
2010 2011 2012 2013 2014 2015
Years

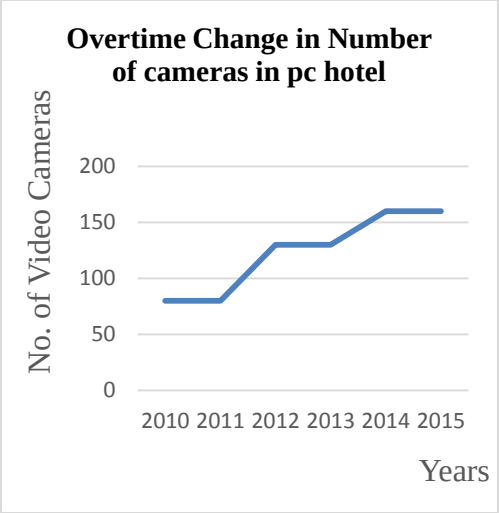

Overtime Change in Number of cameras in DePapae hotel
No. of Video Cameras
1.2
1
0.8
0.6
0.4
0.2
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of cameras in Margalla hotel
No. of Video Cameras
70
60
50
40
30
20
10
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of cameras in Crown Plaza hotel
No. of Video Cameras
35
30
25
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of cameras in Envoy Continental hotel
No. of Video Cameras
20
15
10
5
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of cameras in islambad club
No. of Video Cameras
80
60
40
20
0
2010 2011 2012 2013 2014 2015
Years


Overtime Change in Number of cameras in pc hotel
No. of Video Cameras
200
150
100
50
0
2010 2011 2012 2013 2014 2015
Years